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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,577	10/31/2003	Tapesh Yadav	A15 DIV(14)	1118
25235	7590	10/03/2005	EXAMINER	
HOGAN & HARTSON LLP ONE TABOR CENTER, SUITE 1500 1200 SEVENTEENTH ST DENVER, CO 80202			LE, HOA T	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,577

Applicant(s)

YADAV ET AL

Examiner

H. T. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-52 is/are pending in the application.
- 4a) Of the above claim(s) 36,37 and 41-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-35 and 38-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date May 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 36, 37 and 41-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 1, 2005.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 16-35 and 38-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Instant claims recite a step of "creating a nanoscale powder form" of a substance comprising a metal compound; however, the specification fails to describe adequately how "nanoscale powder" be created from a metal compound. At paragraph [0061], Applicant incorporates by reference commonly-assigned patents regarding method of making nanostructured materials. However, these patents do not teach nanostructure of materials made from the specific metal compound as claimed. Thus, the specification fails to provide a sufficient description of the claimed invention to enable one skilled in the art to practice the invention.

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4. Claims 16-35 and 38-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16 and 26 are incomplete because it does not recite a positive step from which nanoscale powder can be created from a metal compound.

In claim 18, it is unclear whether the percent as claimed is vol%, atm%, wt% or mol%. In addition, it is unclear what the concentration is based on.

Claim 28 suffer the same deficiencies of claim 18.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 16-35 and 38-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over: (a) claims 1-26 of U.S. Patent No. 6,228,904; (b) claims 1-4 of US patent 6,531,704; and (c) claims 1-8 of US patent 6,855,426. Although the conflicting claims are not identical, they are not patentably distinct

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from each other because the instant claims and the reference claims are directed to a method of modifying a nanostructured material comprising a metal compound by combining to the metal compound with at least an additional element.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 16-35 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by (1) the Nass patent (US 5,593,781); (2) the Schmidt patent (US 5,590,387); (3) the Lawandy patent (US 5,882,779); (4) the Hampden-Smith patent (US 6,180,029); (5) the Moy patent (US 6,294,144).

Each of the aforementioned patents teaches a method of modifying a nanostructure materials by combining the lattice of a metal compound with another element. The metal compound comprises at least one element as claimed. See examples and claims.

The surface modification taught in the Nass patent as described necessarily affects the melting point, phase transformation condition, density, hardness, porosity, strength, toughness, surface roughness, , shape, surface area, morphology, surface characteristics, surface composition, size distribution and degree of agglomeration of the starting material.

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The sintering process taught in the Schmidt patent as described necessarily affects the melting point, phase transformation condition, density, hardness, porosity, strength, toughness, surface roughness, critical temperature, energy density, activation density, thermal coefficient, shape, surface area, morphology, surface characteristics, surface composition, size distribution and degree of agglomeration of the starting material. See Schmidt, col. 1, lines 20-67.

The coating process of the Lawandy patent as described necessarily affects the phase transformation condition, density, hardness, porosity, strength, toughness, surface roughness, emissivity, scattering, reactivity, energy density, activation energy, shape, surface area, morphology, surface characteristics, surface composition, size distribution and degree of agglomeration of the starting material. See col. 2, lines 13-33 and col. 6, lines 51-64.

The reactive method taught in the Hampden-Smith patent as described converting a precursor into a material necessarily affects every aspect of the precursor material including the phase transformation condition, density, hardness, porosity, strength, toughness, surface roughness, emissivity, scattering, reactivity, energy density, activation energy, shape, surface area, morphology, surface characteristics, surface composition, size distribution and degree of agglomeration of the starting material.

The calcining process taught in the Moy patent as described necessarily affects the phase transformation condition, density, hardness, porosity, strength, toughness, surface roughness, emissivity, scattering, reactivity, energy density, activation energy, shape, surface

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area, morphology, surface characteristics, surface composition, size distribution and degree of agglomeration of the starting material.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



H. T. Le
Primary Examiner
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